



## Effect of Triphala guggulu and Punarnavadi Kashaya in the management of Hypothyroidism

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### ABSTRACT

Changed food habits & lifestyle have led to a number of disharmonies in the biological system. One among them being HYPOTHYROIDISM. According to ayurveda, Hypothyroidism is mainly caused due to an abnormal Agni, which further affects the dhatvagni and after sequential pathogenesis, the disease condition develops. A diagnosed case of hypothyroidism presenting with weight gain (65kg to 85kg), Evident Hair loss, black coloured discoloration on both legs, constipation (with passage of gas) and dry, rough skin was managed by administration of Triphala Guggulu (1000mg 2t/day) and Punarnavadi Kashay (50ml 2t/day) for a period of 45 days. Tablet Thyroxine (75mg) that was being used by the patient for over 2 years was withdrawn a week before starting the treatment. Triphala Guggulu & Punarnavadi Kashaya are seen to have beneficial effects in bringing down increased TSH levels along with subsiding the signs and symptoms produced.

Keywords : Hypothyroidism, Triphala Guggulu, Punarnavadi kashay, Agni.

### Introduction:

Hypothyroidism is one of the most common and challenging disease conditions in today's era. The prevalence of hypothyroidism in India is around 13%. Hypothyroidism is a condition in which the thyroid gland does not produce enough Thyroxine (T4) and Tri-iodothyronine (T3). Iodine deficiency and auto-immunity are the main causes of Hypothyroidism, out of which auto-immunity is common in the areas of iodine replete. There is no promising cure in contemporary system for Hypothyroidism. The only available treatment is lifelong use of synthetic thyroxine that invites complications in the long run.

Concept of *Agni* (digestive fire) and *Ama* (unwanted by product of improper digestion) are the central dogma of Ayurvedic therapeutics in general and in particular in the management of auto-immune pathologies. *Agni, when becomes Manda(weak), is unable to metabolize* leading to accumulation of intermediate metabolic by-products in the body at different levels. Such unwanted by-products (sometimes may act as free radicals) becomes toxic and may initiate pathologies of auto-immunity.

Sufficient honey for making pills of 500 mg size. It was administered in a dose of two pills (1000mg) twice a day with luke warm water after meal for a period of 45 days. As most body cells have receptors for thyroid hormones; T3 and T4, exert their effects throughout the body. These hormones stimulate diverse metabolic activities in most tissues, leading to an increase in basal metabolic rate. Without thyroid hormones, almost all the chemical reactions of the body would become sluggish. These hormones can be considered as a part of *Kayagni* on which the entire metabolic activities depends. Hence, impaired metabolism can be compared with vitiation of *Agni* according to Ayurveda. Thus, principles that correct the functioning of *agni* will be beneficial in treating various pathologies. Following these case of Hypothyroidism was managed.

### Case report:

A 46 year old female visited the kayachikitsa OPD, at GAM&RC Shiroda Goa. With complains:- weight gain since 2 years which is difficult to lose, (65kg to 85kg), Evident Hair loss since 1 year, black coloured discoloration on both legs since 7 months, constipation (with passage of gas) since 1 month. She has a drug history of Tab thyroxine (75mg) since 2 years. No evidence of family history was noted. The Prakriti was found to be Vata pitta. Despite of continuous consumption of Thyroxine for 2 years; she could not get satisfactory relief in the signs and symptoms and approached Ayurveda for better management.

As malfunctioning of Agni is considered in the pathogenesis; Triphaladya guggulu (1000 mg twice a day) along with Punarnavadi Kashaya (50 ml twice a day) were chosen in the current case and were administered for a period of 45 days. Composition formulation of these two formulations has been placed at Table 1&2.

**Table 1: Composition of Triphala guggulu**

Drug	Botanical Name	Part Used	Quantity
Shunthi	<i>Zingiber officinale</i> Roxb.	Rhizome	1 Part
Pippali	<i>Piper longum</i> Linn.	Fruit	1 Part
Maricha	<i>Piper nigrum</i> Linn.	Fruit	1 Part
Amalaki	<i>Emblica officinale</i> Gaertn.	Pericarp	1 Part
Haritaki	<i>Terminalia chebul</i> Retz	Pericarp	1 Part
Bibhitaki	<i>Terminalia bellerica</i> Roxb	Pericarp	1 Part
Kanchanara	<i>Bauhinia variegata</i> Linn	Stem bark	6 Parts
Guggulu	<i>Commiphora mukul</i> (Hook ex Stocks) Engl.	Resin	10 Parts
Madhu	Honey	-	Q.S

**Table 2: Composition of Punarnavadi Kashaya**

Drug	Botanical Name	Part Used	Quantity
Punarnava	<i>Boerhavia diffusa</i> Linn.	Root	1 Part
Devadaru	<i>Cedrus deodara</i> (Roxb) Loud.	Stem	1 Part
Shunthi	<i>Zingiber officinale</i> Roxb	Rhizome	1 Part
Guggulu	<i>Commiphora</i> Mukul(Hook ex Stocks) Engl.	Resin	1/30 <sup>th</sup> Part

*Triphala Guggulu* was prepared by dissolving *Triphala shodhita Guggulu in kanchanara twak kwatha* until it attained a sticky consistency, followed by addition of powders of *Trikatu* and *Triphala* along with quantity sufficient honey for making pills of 500mg size. It was administered in a dose of 2 pills (1000 mg) twice a day with luke warm water after meals for a period of 45 days.

For preparation of *Punarnavadi Kashaya*; patients were advised to add 400ml potable water to 25 g of coarse powder of the ingredients and reduce to 50ml and consume on empty stomach twice daily for a period of 45 days

Along with the oral medication, *Pathya* and *Apathya*, *ahara* and *Vihara* (wholesome and unwholesome diet and lifestyle) were also advised to the patient. She was asked to consume luke warm water in place of normal/cold water during the treatment period. In addition, was advised to avoid consuming diet that is difficult to digest; consuming diet before complete digestion of earlier diet; frequent and excessive intake of curd and day sleep. Thyroxine (100mcg) that was being used by the patient was withdrawn one week before starting the treatment. Tests for thyroid profiles were conducted and the patient was assessed on subjective parameters before starting the treatment and after 45 days of treatment.

## Observation and Results:

Consider improvement was noticed in complaints along with reduced levels of TSH.

**Discussion:** Thyroid hormones stimulate diverse metabolic activities in most tissues, leading to an increase in basal metabolic rate, may be playing the role of *Kayagni*, which possess its Amshas (components) and influence all over the body. A role of the gut bacteria is to assist in converting inactive  $T_4$  into the active form of thyroid hormone  $T_3$ . About 20% of  $T_4$  is converted to  $T_3$  in the gastrointestinal tract, in the form of  $T_3$  sulfate ( $T_3S$ ) and tri-iodoacetic acid ( $T_3AC$ ). The conversion of  $T_3S$  and  $T_3AC$  into active  $T_3$  requires an enzyme called Intestinal sulfatase. This intestinal sulfatase is released from healthy gut bacteria. Intestinal dysbiosis, an imbalance between pathogenic and beneficial bacteria in the gut, significantly reduces the conversion of  $T_3S$  and  $T_3AC$  to  $T_3$ . All of these connections make it clear that one can't have a healthy thyroid without a healthy gut and vice versa. Fixing the gut is the foremost step to achieve a healthy thyroid.

Ingredients of *Punarnavadi Kashaya* exert diverse activities, *Punarnava* (*Boerhaavia diffusa* Linn) owing to its *Shothahara* property is an excellent remedy for treating generalized oedematous condition and its roots are reputed to be diuretic and laxative. *Devadaru* is *Kapha vata shamaka* and acts as *Deepana pacana* in addition to its immunomodulatory and anti-inflammatory activity. *Shunthi* has *Agni deepana* property.

*Triphaladya guggulu* is especially indicated for the management of *Gandamala*. *Acharya Sushruta* has indicated *Guggulu* in *Shotha* that is one of the most commonly observed clinical manifestation in cases of hypothyroidism. It acts on *Medo vaha srotas* and does *Lekhana Karma* (desiccation), thus might be helpful in managing obesity which is a common presentation of hypothyroidism. It also possess anti-inflammatory property. Animal studies have reported a *Ketosteroid* isolated from oleoresin of *Guggulu* showed a strong thyroid stimulatory action. It is also found to have anti-oxidant effect because of *Guggulsterone* that counters oxygen free radicals. *Kanchanara* possesses anti-oxidant, anti-inflammatory, and immuno-modulatory activities.

*Agnimandya* (impaired digestive functions) is the causative factor as well as one of the consequences of Hypothyroidism. It leads to the formation of *Ama*, which initiates auto-immune responses in the body. *Trikatu* through its *Deepana* properties, help in maintaining *Agni* thus preventing further formation of *Ama*.

**Table 3: Effect of therapy on Thyroid Profile**

Treatment		Before Treatment	After Treatment
Thyroid Profile	TSH	92,300 uIU/ml	52,000 uIU/ml
	T <sub>3</sub>	0.69ng/ml	0.46ng/ml
	T <sub>4</sub>	2,850ng/ml	1.564ng/ml

*Triphala* supports healthy digestion and absorption. It is a powerful antioxidant, protect cells from the damage of free radicals. Constipation, a symptom in Hypothyroidism, can impair hormone clearance and can elevate oestrogen levels, which in turn raises thyroid binding globulin levels and decrease the levels of thyroid hormones in the body. *Triphala* can prove to be beneficial in avoiding constipation, thus help in maintaining physiological levels of thyroid hormones.

Vitamin-C is an active component of *Devadaru* and *Amalaki*. Studies have shown that natural antioxidants such as vitamin-C can reverse thyroid damage by optimizing functions of thyroid. Thyroid gland need Vitamin-C to keep it healthy. Effect of therapy on Thyroid profile also validates the role of *Agni* and vitamin-C (Table-5).

As Hypothyroidism is caused due to the malfunctioning of *Agni* and *Ama*; and the ingredients of trial drugs helps in repairing them; *Samata* (association with *Ama*) and *Strotorodha* (obstruction in channels) might have got cleared that pacified symptoms of Hypothyroidism by maintaining physiological thyroid profiles. Optimizing the function of thyroid gland thus yielding positive results not only in the subjective parameters, but also on the objective parameters of Hypothyroidism.

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**Conclusion:**

This was a single case study that validated the effect of *Triphalaguggulu* and *Punarnavadi kashaya* in the management of Hypothyroidism. Though Thyroxine was discontinued, the symptoms were under control with the current trail drugs in larger number of patients and draw more concrete conclusions. Awareness regarding Ayurveda is to be drawn among the masses so that a maximum number of sufferers can utilize the services and have the benefit of an enhanced quality of life.